

PROGRESS REPORT  
September 22, 1972

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E72-10126  
CR-128180

WHEAT: It's Water Use, Production and Disease Detection and Prediction

ERTS-A Proposal Number: 060-3

NASA-GSFC Contract No.: NAS5-21822

NASA-GSFC Principal Investigator Identification Number: UN 661

OBJECTIVES

Objectives of the investigation are: (1) to evaluate the effect of water stress, disease and leaf area on the reflectance characteristics of wheat, (2) to evaluate disease losses in terms of yield and water use, and (3) to predict disease severity and economic loss.

Problems

1. The data collection platforms have not been received.
2. PEIS of U2 data have just been received for the March, April and June 1972 flights. Due to cloud cover and/or flight lines, only the imagery from Finney County site appear useful.
3. Due to lack of infestation of wheat streak by the mite vector to the Riley County test plot we have decided to inoculate each plant in the 1973 wheat streak test plot. Because of tedious work involved only a 100' x 100' area will be inoculated instead of a 300' x 300' area. Water use on this area will be determined from soil moisture measurements and not by the Bowen ratio method as previously outlined.

Accomplishments During the '72' Growing Season

1. Crop yields and their corresponding disease severity levels have been determined for the commercial and test areas.

(E72-10126) WHEAT: IT'S WATER USE,  
PRODUCTION AND DISEASE DETECTION AND  
PREDICTION Progress Report E.T. Kanemasu  
(Kansas State Univ.) 22 Sep. 1972 3 p  
N72-32374 Unclas  
CSCL 02D G3/13 00126

2. Leaf area and soil moisture were determined for the Riley County sites.
3. Meteorological data needed for disease prediction were taken.
4. DCP interfacing with sensors was designed.

#### Planned Accomplishments

1. Obtain bare/ground reflectance patterns on test sites from ERTS-1.
2. Assemble and place DCP in commercial fields.
3. Inoculate Riley County test plots.

#### Standing Order Forms

1. August 22, 1972 - Added KSU A-4.

# ERTS IMAGE DESCRIPTOR FORM

(See Instructions on Back)

DATE September 20, 1972

PRINCIPAL INVESTIGATOR E. T. Kanemasu

GSFC NAS5-21822

ORGANIZATION Kansas State University

NDPF USE ONLY

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N \_\_\_\_\_

ID \_\_\_\_\_

PRODUCT ID (INCLUDE BAND AND PRODUCT)	FREQUENTLY USED DESCRIPTORS*			DESCRIPTORS	
	CROPLAND	PASTURE	LAKE	Irrig.	
1007165632	X		X		
1003163412	X	X			Scattered clouds
1003163505	X		X		
1003163502	X		X		
1003163415	X	X			Scattered clouds
1022163915	X	X	X		
1022163855	X				River
1006165115	X	X		X	Scattered clouds
1006165045	X		X	X	Scattered clouds
1024165055	X		X	X	
1024165115	X	X		X	
1022163485					River

\*FOR DESCRIPTORS WHICH WILL OCCUR FREQUENTLY, WRITE THE DESCRIPTOR TERMS IN THESE COLUMN HEADING SPACES NOW AND USE A CHECK (✓) MARK IN THE APPROPRIATE PRODUCT ID LINES. (FOR OTHER DESCRIPTORS, WRITE THE TERM UNDER THE DESCRIPTORS COLUMN).

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